ACTIVE METAL/AQUEOUS ELECTROCHEMICAL CELLS AND SYSTEMS

ABSTRACT OF THE DISCLOSURE

Alkali (or other active) metal battery and other electrochemical cells incorporating active metal anodes together with aqueous cathode/electrolyte systems. The battery cells have a highly ionically conductive protective membrane adjacent to the alkali metal anode that effectively isolates (de-couples) the alkali metal electrode from solvent, electrolyte processing and/or cathode environments, and at the same time allows ion transport in and out of these environments. Isolation of the anode from other components of a battery cell or other electrochemical cell in this way allows the use of virtually any solvent, electrolyte and/or cathode material in conjunction with the anode. Also, optimization of electrolytes or cathode-side solvent systems may be done without impacting anode stability or performance. In particular, Li/water, Li/air and Li/metal hydride cells, components, configurations and fabrication techniques are provided.